

Response Under 37 C.F.R. § 1.192

Appellant's Brief

Application No. 09/322,333

Paper Dated in furtherance of

Notice of Appeal filed December 29, 2003

Confirmation No. 7839

Attorney Docket No. 1217-990766



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/322,333  
Applicants : Takeshi KONDO et al.  
Filed : May 28, 1999  
Title : **METHOD OF USING A PRESSURE  
SENSITIVE ADHESIVE SHEET**  
Group Art Unit : 1771  
Examiner : Daniel R. Zirker

MAIL STOP APPEAL BRIEF PATENTS  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed on December 29, 2003. The Notice of Appeal appeals the final rejection of claims 5-8.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on February 27, 2004.

Theresa Ulinski

(Typed name of person depositing mail)

  
Signature Date  
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**Response Under 37 C.F.R. § 1.192**

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The headings used hereinafter and the subject matter set forth under each heading is in accordance with 37 C.F.R. § 1.192(c).

**I. REAL PARTY IN INTEREST**

Lintec Corporation is the assignee of the entire right, title, and interest in the above-identified application, as evidenced in the Assignment recorded May 28, 1999 on reel 010004, frame 0089, and as such, is the real party in interest in this Appeal.

**II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interference known to the Appellants, the Appellants' legal representative or Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

**III. STATUS OF CLAIMS**

Claims 5-8 remain pending in the present application and are currently rejected. Specifically, claims 5-8 stand finally rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement.

Claims 5-8 are reproduced in Appendix IX, which is attached hereto.

**IV. STATUS OF AMENDMENTS**

There were no claim changes made after the final Office Action dated August 27, 2003. The claims on appeal are the claims as presented in the September 14, 2002 Response After Final Rejection, which were finally rejected in the final Office Action of August 27, 2003.

**V. SUMMARY OF THE INVENTION**

The present invention is directed to the use of a pressure sensitive adhesive sheet (page 13, lines 11-13). The adhesive sheet includes a substrate and a pressure sensitive

**Response Under 37 C.F.R. § 1.192**

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Application No. 09/322,333

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adhesive layer superimposed thereon (page 3, lines 19-22). The substrate exhibits a maximum value of dynamic viscoelasticity  $\tan \delta$  of 0.78 to 1.61 at a temperature of -5 to 80°C (page 3, lines 23-25 and page 21, Table 1). The pressure sensitive adhesive sheet is applied to the surface of an adherend, the surface having a height difference of at least 30  $\mu\text{m}$  (page 2, lines 4-9). The pressure sensitive adhesive sheet protects the surface of the adherend while the adherend is worked upon (page 4, lines 11-18). The adherend may be a semiconductor wafer and working of the semiconductor wafer includes grinding the back of the semiconductor wafer while protecting the wafer surface by means of the pressure sensitive adhesive sheet (page 13, lines 14-17). The range of  $\tan \delta$  of the pressure sensitive adhesive sheet substrate of 0.78 to 1.61 at a temperature of -5 to 80°C permits the pressure adhesive sheet to follow the irregularities of the back surface of the adherend (such as the surface of a semiconductor wafer) to enable smooth grinding of the backside of the adherend surface (page 13, line 11 – page 14, line 5).

**VI. ISSUES**

The issues on appeal include:

- I. Does the specification contain a written description of the invention as required by 35 U.S.C. § 112, first paragraph?
- II. Are claims 5-8 based on a specification which complies with 35 U.S.C. § 112, first paragraph?

**VII. GROUPING OF CLAIMS**

Claims 5-8 stand or fall together and are grouped accordingly.

The support for consideration of the grouping of claims is addressed in the arguments set forth in the Arguments section of this Appeal Brief.

**Response Under 37 C.F.R. § 1.192**

**Appellant's Brief**

Application No. 09/322,333

Paper Dated in furtherance of

Notice of Appeal filed December 29, 2003

Confirmation No. 7839

Attorney Docket No. 1217-990766

**VIII. ARGUMENT**

The Arguments made in the November 26, 2003 Response to the August 27, 2003 Office Action are hereby incorporated by reference. The Examiner's objection to the specification and claim rejection under 35 U.S.C. § 112, first paragraph, are traversed on the grounds that the claimed subject matter is enabled by the specification despite the presence of inoperative embodiments as discussed hereinafter.

Each of claims 5-8 recites a method of using a pressure sensitive adhesive sheet, the pressure sensitive adhesive sheet comprising a substrate and a pressure sensitive adhesive layer superimposed thereon. The claims require that the substrate have a maximum value of dynamic viscoelasticity  $\tan \delta$  of 0.78 to 1.61 at a temperature of -5 to 80°C. The basis for the specification objection and claim rejections is that the Declaration of Kouichi Nagamoto submitted with the Response of February 3, 2003 (hereinafter the "Declaration") reports that certain combinations of substrate components listed in the application fail to meet the claimed  $\tan \delta$  range of 0.78 – 1.61. The combinations of substrate components at issue are (1) Nippon Kayaku Co. urethane acrylic oligomer UX3301 ( $M_w = 8000$ ) with dicyclopentanyl acrylate and (2) that same urethane acrylic oligomer with dicyclopentenyl acrylate. The Examiner asserts at page 2 of the Advisory Action of December 11, 2003 that "two particularly preferred embodiments when focused upon apparently do not work despite the fact that the specification teaches that these two embodiments are particularly suitable" (emphasis in original). The December 11, 2003 Advisory Action goes on to assert that the failure of the two combinations of substrate components "sets forth a clear case that the specification fails to meet the mandate of 35 U.S.C. § 112, first paragraph." This reasoning fails for two reasons:

**Response Under 37 C.F.R. § 1.192**

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Application No. 09/322,333

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Notice of Appeal filed December 29, 2003

Confirmation No. 7839

Attorney Docket No. 1217-990766

- (1) The two combinations of substrate components are not described in the specification as "particularly preferred embodiments"; and
- (2) The report of two combinations having a  $\tan \delta$  falling outside the claimed range does not render the specification defective in view of the numerous combinations disclosed and operability of the combinations in the examples. Each of these points are addressed in detail below.

**A. The two combinations of substrate components which result in  $\tan \delta$  values outside the claimed range are not described in the specification as being "particularly preferred embodiments".**

The specification contains a description of suitable substrates which could be used for use in the present invention at page 5, line 20 - page 9, line 2. The specification states at page 5, lines 20-22 that "[t]he substrate is composed of a resin film, the type of which is not particularly limited as long as the above properties [ $\tan \delta$  thickness, Young's modules] are exhibited. Examples of suitable photocurable resins for producing the substrate include a photopolymerizable urethane acrylate oligomer or a polyene thiol resin. A long list of possible constituents for the urethane acrylate oligomer is described at page 6, lines 10-21. The urethane acrylate oligomer may require a reactive diluent (described as a photopolymerizable monomer). Possible monomers are listed at page 7, line 15 - page 8, line 2. Even without considering the alternative substrate material of polyene thiol resin described at page 8, lines 8-21, the specification contains a very large number of operable

**Response Under 37 C.F.R. § 1.192**

**Appellant's Brief**

Application No. 09/322,333

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embodiments for the substrate. Operable embodiments may be selected from at least the permutations of five isocyanates and six polyols listed as components of the urethane acrylate oligomer, plus eleven listed reactive diluent monomers, i.e., 330 different combinations. Nowhere does the specification state that the particular combinations of a Nippon Kayaku Co. oligomer with dicyclopentanyl acrylate or dicyclopentenyl acrylate are preferred embodiments for the substrate.

**B. The failure of the two particular combinations of urethane acrylate oligomer and monomer do not detract from enablement of the claims.**

The first paragraph of 35 U.S.C. § 112 requires a specification to describe “the manner and process of making and using [an invention] in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the [invention].” A question of enablement is evaluated against the claimed subject matter. The focus of the examination inquiry is whether everything within the scope of the claim is enabled. MPEP § 2164.08. This enablement requirement is satisfied when one skilled in the art after reading the specification can practice the claimed invention without undue experimentation. *AK Steel Corporation v. Sollac*, 344 F.3d 1234 (Fed. Cir. 2003). Enablement is not precluded by the need for some experimentation to practice the claimed invention. *Atlas Powder v. E.I. Du Pont De Nemours & Company*, 750 F.2d 1569 (Fed. Cir. 1984). The amount of experimentation however must not be unduly extensive. *Id.* Moreover, in a situation where the claimed subject matter covers numerous combinations, even if some of the claimed combinations are inoperative, the

**Response Under 37 C.F.R. § 1.192**

**Appellant's Brief**

Application No. 09/322,333

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Notice of Appeal filed December 29, 2003

Confirmation No. 7839

Attorney Docket No. 1217-990766

claims are not necessarily invalid. *Id.* “It is not a function of the claims to specifically exclude...possible inoperative substances....” *Id.* at 1576, citations omitted. Naturally though, if the number of inoperative combinations is significant and would force one of ordinary skill in the art to experiment unduly in order to practice the invention, the claims might not be enabled. *Id.* at 1576-1577.

In the present case, the specification describes either a urethane acrylate oligomer (optionally diluted with a reactive monomer) or a polyene thiol resin as being suitable constituents for the substrate. In the subset of urethane acrylate oligomer resins, Appellants listed numerous optional photopolymerizable monomers including a class of monomers of alicyclic compounds which may be used as reactive diluents in producing a substrate from a urethane acrylate oligomer. To the extent that dicyclopentanyl acrylate and dicyclopentenyl acrylate are unsuitable for use with a particular urethane acrylate oligomer (as occurred in the tests produced for the Declaration), one skilled in the art could still practice the claimed invention in view of the extensive disclosure of potential components for the substrate and in view of the operable examples disclosed in the specification. One skilled in the art will understand that superior performances obtained when the claimed tan  $\delta$  range is achieved and that performance which is less than superior can be expected when formulations provide a tan  $\delta$  value outside the claimed range. The working embodiments reported in the present specification provide sufficient information to understand the claimed process. Appellants disclosed the best mode known to them at the time of filing the application as well as other ways of practicing the invention. To the extent that the use of dicyclopentanyl acrylate and dicyclopentenyl acrylate with one particular urethane acrylate oligomer results in a substrate having a tan  $\delta$  value outside the claimed range, the results do not cause the

**Response Under 37 C.F.R. § 1.192**

**Appellant's Brief**

Application No. 09/322,333

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Confirmation No. 7839

Attorney Docket No. 1217-990766

specification to fail to enable one skilled in the art to practice the invention. As stated therein, the claimed methods require a substrate having a particular set of properties, especially a  $\tan \delta$  value of 0.78 – 1.61.

The  $\tan \delta$  value depends on several factors. When the substrate is a urethane acrylate oligomer (just one possible choice of substrate), those factors include the particular photopolymerizable monomer used, the particular urethane acrylate oligomer used, and the combination of the photopolymerizable monomer and the urethane acrylate oligomer as well as their compatibility. As noted on the record previously, there are many commercially available urethane acrylate oligomers having various properties and chemical structures. There may be certain types of urethane acrylate oligomers that produce a  $\tan \delta$  value that falls within the claimed range combination with dicyclopentanyl acrylate or dicyclopentenyl acrylate. Data in the Declaration that one particular urethane acrylate oligomer combined with dicyclopentanyl acrylate or dicyclopentenyl acrylate results in a substrate having a  $\tan \delta$  value outside the claimed range does not demonstrate that the specification is defective in enablement of claims 5-8.

In view of the foregoing, the specification is believed to contain a written description of the claimed invention and be in compliance with 35 U.S.C. § 112, first paragraph.

**C. Conclusion**

In summary, claims 5-8 of the present application define methods of using a pressure sensitive adhesive sheet where the adhesive sheet includes a substrate and a pressure sensitive layer. That substrate has a maximum  $\tan \delta$  value of 0.78 to 1.61. To the extent that certain potential components in a particular combination are inoperative in order to achieve

**Response Under 37 C.F.R. § 1.192**

**Appellant's Brief**

Application No. 09/322,333

Paper Dated in furtherance of

Notice of Appeal filed December 29, 2003

Confirmation No. 7839

Attorney Docket No. 1217-990766

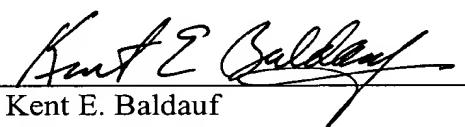
the claimed range of tan  $\delta$  values, the claims remain valid since the claimed subject matter as a whole is described in clear and concise and exact terms to enable one skilled in the art to practice the invention. The objection to the specification and objection of claims 5-8 under 35 U.S.C. § 112, first paragraph, should be reversed.

A check in the amount of \$330.00 accommodates the Appeal Brief. The Commissioner for Patents is hereby authorized to charge any additional fees which may be required to Deposit Account No. 23-0650. Please refund any overpayment to Deposit Account No. 23-0650. The original and two copies of this Appeal Brief are enclosed.

Respectfully submitted,

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